CLAIMS

1. A method for the purification of 1,1-dichloroethane comprising bringing 1,1-dichloroethane containing a compound having a nitro group and/or a hydroxyl group as a stabilizer into contact with zeolite having an average pore size of 3.4 to 11Å and/or a carbonaceous adsorbent having an average pore size of 3.4 to 11Å in a liquid phase to reduce the stabilizer.

2. A method for the purification of 1,1-dichloroethane as described in claim 1, wherein an Si/Al ratio of the zeolite is 2 or less.

3. A method for the purification of 1,1-dichloroethane described in claim 1 or 2, wherein the zeolite is at least one type selected from a group consisting of Molecular Sieve 4A, Molecular Sieve 5A, Molecular Sieve 10X, and Molecular Sieve 13X.

4. A method for the purification of 1,1-dichloroethane described in claim 1, wherein the carbonaceous adsorbent is Molecular Sieving Carbon 4A and/or Molecular Sieving Carbon 5A.

5. A method for the purification of 1,1-dichloroethane described in any one of claims 1 to 4, wherein a temperature for bringing the 1,1-dichloroethane containing the compound having the nitro group and/or the hydroxyl group as the stabilizer into contact with the zeolite and/or carbonaceous adsorbent is within a range of from -20 to +60°C.

6. A method for the purification of 1,1-dichloroethane described in any one of claims 1 to 5, wherein a pressure for bringing the 1,1-dichloroethane containing the compound having the nitro group and/or the hydroxyl group as the stabilizer into contact with the zeolite and/or carbonaceous adsorbent is within a range of from 0 to 1 MPa.

7. A method for the production of 1,1-difluoroethane comprising using as a reaction raw material 1,1-dichloroethane reduced in amount of a

compound having a nitro group and/or a hydroxyl group obtained by using the purification method described in any one of claims 1 to 6 contained as a stabilizer.

8. A process for the production of 1,1-difluoroethane comprising the following three steps:

(1) a step of using the purification method described in any one of claims 1 to 6 to reduce a compound having a nitro group and/or a hydroxyl group contained as a stabilizer in 1,1-dichloroethane;

(2) a step of reacting the 1,1-dichloroethane reduced in amount of the compound having the nitro group and/or the hydroxyl group after the step of (1) with hydrogen fluoride in a gaseous phase in the presence of a fluorination catalyst to obtain a gas mixture mainly containing 1,1-difluoroethane; and

(3) a step of separating the gas mixture mainly containing the 1,1-difluoroethane obtained in the step of (2) and recirculating at least part of an unreacted product to the step (2).

9. A process for the production of 1,1-difluoroethane described in claim 8, wherein the step (2) is conducted by using 1,1-dichloroethane reduced in total content of the compound having the nitro group and/or the hydroxyl group obtained by the step of the above (1) to 30 mass ppm or less.

10. A process for the production of 1,1-difluoroethane described in claim 8, wherein the step (2) is conducted by using 1,1-dichloroethane reduced in total content of the compound having the nitro group and/or the hydroxyl group obtained by the step of the above (1) to 10 mass ppm or less.

11. A process for the production of 1,1-difluoroethane described in any one of claims 7 to 10, wherein the compound having the nitro group and/or the hydroxyl group is at least one type of compound selected from a group consisting of nitro methane, nitro ethane, nitro cresol, nitro toluene, nitro phenol, phenol,

cresol, 2,6-di-butyl-p-cresol, and aminomethylphenol.

12. A process for the production of 1,1-difluoroethane described in claim 8, wherein the fluorination catalyst used in the step of the above (2) contains at least one type of element selected from a group consisting of Cu, Mg, Zn, Pb, Cr, Al, In, Bi, Co, and Ni, and the contact temperature is 100 to 350°C.

13. A process for the production of 1,1-difluoroethane described in claim 8, wherein the unreacted product recirculated to the step (2) in the step of the above (3) is at least one type of compound selected from a group consisting of 1-chloro-1-fluoroethane, 1,1-dichloroethane, and hydrogen fluoride.